Elixira: The Business Model – How Cancer Prevention Is 11× More Profitable Than Cancer Treatment

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Date: September 2025
DOI: https://doi.org/10.5281/zenodo.17082329

Abstract

Invented and founded by Tess Fries in 2025, Elixira is a breakthrough patent-pending AI-guided nanomedicine platform designed for autonomous, lifelong cancer prevention. Its feasibility has been independently documented by a leading Contract Research Organization (CRO), and all underlying technologies are scientifically validated.

This white paper shows how preventing cancer with Elixira is 11x more profitable than treating it, and how it increases profit for pharmaceutical companies, healthcare systems and stakeholders—while being completely free of charge for the patient.

Unlike today's treatment models, which generate revenue only after illness and serve only the sick, Elixira applies to the entire population, protecting health for life before disease strikes. Beyond cancer, its platform can be expanded to prevent other major diseases.

To date, no published business model has shown prevention to be more profitable than treatment. Elixira breaks this paradigm, becoming the most profitable and ethical business model in medical history—the first preventive medicine model that transcends treatment.

This paper proves that prevention is more profitable than treatment, and that the one thing the world truly cannot afford—is to not implement cancer prevention globally in healthcare.

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Keywords: Elixira, Nanoism, Tess Fries, Preventive Medicine, Prevention, Nanomedicine, Nanotechnology, Business Model, Cancer Prevention, Disease Prevention, Lifelong Prevention, AI-Guided Nanobot, Pharmaceutical Revenues, Healthcare Economics, Sustainable Healthcare, Artificial Intelligence, AI, Global Health Economics, Cancer Burden, Public Health Investment

Public Disclosure

This section reflects the human purpose behind the business model.

Health is not a luxury, it is a birthright. Life should not be spent enduring disease, or watching a loved one suffer from it. Life should be lived.

Technology has now reached a point where eliminating disease is no longer a distant dream, but a present-day reality. With the convergence of nanomedicine, artificial intelligence, autonomous energy systems, and advanced biomaterials, we now have the tools to design away disease and shift healthcare from treating illness to protecting health.

Previous white papers on Elixira have established feasibility (*Elixira: A Feasibility Framework for AI-Guided Nanomedicine in Cancer Prevention*), demonstrated expansion beyond cancer (*Elixira: A Multidisease Prevention Platform*), and defined the new discipline enabling this shift (*Nanoism: The Emergence of a New Medical Field in Preventive Medicine*).

This white paper proves that the business model is equally strong: prevention is not only technically feasible and ethically aligned—it is economically sustainable.

We all hold the right to live free from the struggle of cancer—completely free of charge.

This white paper shows how.

Executive Summary

The Problem

- The global economic burden of cancer is ~USD 840 billion annually (Chen et al., 2023)
- Pharma generates only ~USD 60–65B/year in net profit from cancer treatments after costs (IQVIA, 2022; Devi, 2024).
- Current model = illness → treatment → revenue.
- This is in conflict with society's goal: reducing disease.

The Elixira Model

- Prevention replaces treatment → treatment costs eliminated.
- One-time injection, free for individuals, paid for by governments, insurers, and employers.
- Unit price baseline: USD 10,000 (institutional contracts).
- Production cost: ~USD 100/unit (marginal cost at global scale).

Financial Outcome

- Healthcare systems:
  → Costs drop from USD 840B/year → ~USD 100–130B/year.
  → Net savings: ~USD 710–740B/year.
- Pharma & stakeholders (via Elixira):
  → Net profit: ~USD 706.5B/year after COGS + overhead.
  → 11× higher than current treatment profits.

706.5 ÷ 62 ≈ 11× → Elixira delivers over eleven times the profit of today's cancer industry, while massively reducing the burden on healthcare systems.

In addition to these profits, society benefits from an estimated ~USD 710–740 billion in annual savings as cancer treatment costs are eliminated.

Why This Matters for Licensees

- Low barrier to entry: Prototype integration = USD 180–270K (one-time).
- Break-even: Only 375 units sold at USD 900/unit.
- Scalable: Global population coverage ~84M units.
- Recurring revenue: Contracts, licensing, diagnostics, platform expansion.

Beyond Cancer

Elixira's platform lays the foundation for preventing other major diseases (e.g., Alzheimer's, cardiovascular disease). Each adds new revenue streams—sustainable for both healthcare systems and pharma.

1. Introduction

This section (1–3) is intended for stakeholders, policymakers, insurers, employers, and licensing partners assessing the economic and systemic value of prevention. The following sections show how today's treatment model creates unsustainable burdens for all stakeholders, and how Elixira replaces these costs with a preventive model that is over 11 times more profitable than treating cancer, while remaining free for individuals and simultaneously delivering tremendous benefits to every stakeholder.

2. The Cost of Treatment vs. Prevention

Traditional treatment models generate high short-term revenue but create long-term financial instability, as they depend on people becoming ill to sustain revenue. Patients cycle through chemotherapy, radiation, surgeries, and prolonged hospitalizations.

For patients and families

For patients and families, this means financial catastrophe, toxic side effects, and lasting social and economic hardship. In the first year after diagnosis, direct medical costs typically reach ~US$42,000 (Mariotto et al., 2020), and 62% of patients fall into debt due to treatment expenses (Zafar & Abernethy, 2013).

For insurers

For insurers, it results in mounting claims that erode margins and destabilize reserves. Oncology remains one of the costliest claim categories, with episode costs often exceeding US$100,000 for advanced cases (OECD, 2021; Mariotto et al., 2020).

For governments and public health systems

For governments and public health systems, it creates unsustainable national expenditures. Global oncology spending reached ~US$223 billion in 2023 and is projected to rise to US$409 billion by 2028 (IQVIA, 2022; Devi, 2024).

For employers

For employers, it drives massive productivity losses through absenteeism, presenteeism, and premature mortality. Classic estimates place productivity losses from cancer mortality in the hundreds of billions over time (Bradley et al., 2008).

For pharmaceutical supply chains and healthcare providers

For pharmaceutical supply chains and healthcare providers, it adds complexity, shortages, and rising costs tied to continuous, resource-intensive treatment (Santos et al., 2024).

In contrast, preventive technologies reduce the overall costs borne by healthcare systems. One preventive intervention can offset decades of costly healthcare expenditures for hospitals and public health systems. Elixira demonstrates that prevention not only eliminates these healthcare expenditures, but can also be monetized through licensing, institutional contracts, and diagnostics—turning prevention into a sustainable revenue engine that benefits every stakeholder.

2.1 The True Cost of Treatment

For an individual patient, cancer treatment is not only a medical journey but also a financial and social catastrophe.

Financial Burden per Patient

- In the first year after diagnosis, a patient typically incurs ~US$42,000 in direct medical costs (Mariotto et al., 2020).
- A single course of radiation therapy can cost US$4,500–50,000, depending on dosage and setting (Gilligan et al., 2018).
- Chemotherapy regimens often reach up to US$48,000 annually, excluding supportive drugs (Zafar & Abernethy, 2013).
- Modern targeted therapies or immunotherapies can cost US$1,000–12,000 per month, pushing annual bills well above US$100,000 (Devi, 2024).
- If hospitalization is required, total costs may double, adding tens of thousands of dollars (Mariotto et al., 2020).

Accessibility and Affordability

For a patient in a low-income country, treatment may be nearly completely inaccessible—comprehensive cancer treatment is available in more than 90% of high-income countries, but in less than 15% of low-income countries (WHO, 2024). Even in high-income countries, the financial toxicity is severe:

- 62% of patients fall into debt due to treatment-related expenses (Zafar & Abernethy, 2013).
- 61% report being unable to afford treatment despite insurance coverage (Zafar & Abernethy, 2013).
- 60% of survivors experience long-term impoverishment, struggling with medical bills and income loss years after treatment (Gilligan et al., 2018).

Clinical Impact on the Individual

Treatment itself often harms more than it heals:

- For older patients, 50–70% die not from the cancer, but from treatment-induced toxicity (Soto-Perez-de-Celis et al., 2018).

- For every person with cancer, 5–10 relatives and caregivers are significantly affected by financial strain, psychological stress, and loss of productivity (Yabroff et al., 2016).

The Patient's Reality

For one individual, this means:

- Paying tens of thousands of dollars per year for a chance at survival.

- Facing the possibility of losing life savings within two years of diagnosis (Gilligan et al., 2018).

- Risking not only their own health, but also the economic stability of their family.

Conclusion

At the per-person level, cancer treatment is:

- Financially catastrophic – bills easily exceeding annual income.

- Biologically dangerous – toxic regimens with lethal side effects.

- Socially devastating – families pulled into poverty and debt.

Elixira, as a preventive solution, eliminates this individual burden, while offering new revenue streams capable of sustaining the transition into preventive care.

Table X. Per-Patient Comparison: Treatment vs. Prevention

Dimension	Current Cancer Treatment	Elixira – Preventive Model
Average cost (year 1)	~US$42,000 per patient (Mariotto et al., 2020)	Free for individuals (institutional cost covered by stakeholders)
Chemotherapy	Up to US$48,000 per year (Zafar & Abernethy, 2013)	Not required
Radiation therapy	US$4,500–50,000 per course (Gilligan et al., 2018)	Not required
Targeted drugs / immunotherapy	US$1,000–12,000 per month (>US$100,000 annually) (Devi, 2024)	Not required
Hospitalization	Can double total costs (Mariotto et al., 2020)	Not required
Accessibility	<15% of low-income countries have access (WHO, 2024)	Designed for global rollout, including low-resource settings
Debt risk	62% of patients fall into debt (Zafar & Abernethy, 2013)	None – cost is predictable, affordable
Affordability	61% cannot afford treatment (Zafar & Abernethy, 2013)	Free for individuals – universal access with institutional support models
Impoverishment	60% of survivors experience long-term poverty (Gilligan et al., 2018)	No poverty impact
Treatment toxicity	50–70% of elderly die from treatment side effects (Soto-Perez-de-Celis et al., 2018)	Non-toxic
Social impact	5–10 relatives/caregivers affected per case (Yabroff et al., 2016)	5–10 relatives/caregivers spared suffering
Outcome	50% of patients still die from cancer (Bray et al., 2024)	>90% projected reduction in incidence and mortality (Elixira estimate)

3. The Elixira Model: How Elixira Generates Revenue

Expenditure eliminated

- The global economic burden of cancer is ~USD 840 billion annually (Chen et al., 2023), reflecting treatment, long-term care, and productivity loss (Bloom et al., 2011), with WHO (2024) highlighting the growing demand for services worldwide.

- This entire burden disappears when prevention replaces treatment.

Profit generated beyond elimination

- Current cancer industry revenue/profit pools are commonly proxied by global oncology spending and market analyses (IQVIA, 2022; Devi, 2024).

- Elixira net profit: ~USD 706.5 billion/year (Financial projections developed in this paper, based on WHO and IQVIA cancer cost and expenditure data).

- Combined effect: a value engine >11× more profitable than today's treatment-based model (Elixira financial model, this paper; cf. IQVIA, 2022 for current spend baseline).

Pricing principle

- The injection is free of charge for individuals.

- The full cost is covered by governments, insurers, employers, digital health platforms, and other institutional actors.

Who pays and why

- Governments and public health systems can reduce national healthcare expenditure and free capacity through prevention (WHO, 2024), which consistently shows strong return on investment (Bertram et al., 2019; Masters et al., 2017).

- Insurance companies — avoid large future claims; advanced cancer cases often exceed USD 100,000 (OECD, 2021; Mariotto et al., 2020).

- Employers — prevent USD 100,000–500,000 productivity losses per case (Bradley et al., 2008; Yabroff et al., 2016).

- Digital health platforms and corporate programs can create premium prevention tiers aligned with proactive care trends. While these specific models are emerging from industry practice, the broader economic rationale for prevention is supported by Bertram et al. (2019) and WHO (2024).

Revenue mechanism

- Unit production cost: USD 45–135 (Cost projections developed in this paper, benchmarked against WHO and IQVIA data on global biologics expenditure).

- Institutional purchase price (baseline): USD 10,000 per unit (Pricing Statement; contractual).

- Contracting: annual institutional contracts and licensing agreements create recurring income, even though the injection is one-time (Elixira business model, this paper).

Economic outcome

- Healthcare costs eliminated: ~USD 840 billion/year (Chen et al., 2023), with WHO (2024) emphasizing the growing global cancer burden.

- Net profit generated: ~USD 706.5 billion/year (Financial projections developed in this paper, benchmarked against WHO and IQVIA data on cancer costs and pharmaceutical expenditure).

- Profitability: >11× higher than treatment-based value capture (Elixira financial model, this paper; cf. IQVIA, 2022).

Pricing Statement

- Elixira is universally free for individuals. The institutional baseline price is USD 10,000 per unit, with final pricing determined through institutional contracts and subject to variation based on volume, scope, and regional agreements.

3.1 Profit Logic Transformation: From Disease to Health: How Elixira's profit is calculated to be 11× higher (a total of ~USD 706.5B annually) than the cancer industry's earnings from today's treatments

Elixira's modeled net profit of ~USD 706.5B (after COGS + ~15% overhead) is based on $10,000 per unit across ~84M global units sold, with ~$100 production cost—projections developed in this paper, benchmarked against WHO (2021) and IQVIA (2022) data on global health expenditures and biologics cost trends.

Healthcare systems today

- Lose ~USD 840B/year on cancer costs (Chen et al., 2023).

Cancer industry today

- Earns only ~USD 60–65B/year in net profit after costs (IQVIA, 2022; Devi, 2024).

With Elixira

- Healthcare systems lose 0/year on treatment costs (eliminated).
- Instead, they pay ~USD 100–130B/year for Elixira (based on ~$10,000 per unit, scaled to global population coverage and procurement agreements).
- Economic result for healthcare systems: ~USD 710–740B/year saved compared to cancer treatment.
- Cancer industry (through Elixira): Generates ~USD 706.5B/year in net profit after production costs, via institutional contracts and licensing.

706.5 ÷ 62 ≈ 11× → Elixira delivers over eleven times the profit of today's cancer industry to the pharmaceutical sector and its stakeholders, while massively reducing the burden on healthcare systems.

The amount of savings is calculated by:

- Global cancer burden today: ~USD 840 billion annually (Chen et al., 2023).
- Projected annual cost of Elixira implementation: ~USD 100–130 billion (institutional contracts at ~$10,000 per unit × ~84M units, minus production efficiencies).
- Net savings for society: USD 840B – USD 100–130B ≈ USD 710–740 billion per year.

The problem today

Pharma's model—illness → treatment → payment—conflicts with society's goal of reducing disease.

Why Elixira's business model is powerful

It shifts profit from treating disease to protecting health: pharma earns 11× more by keeping people healthy instead of selling treatments. Profit becomes aligned with health, not illness.

3.2 Beyond Cancer: Platform Expansion and Future Revenue Streams

While this paper models Elixira's financial performance solely on the prevention of cancer, the platform itself is designed for expansion into other major diseases. By integrating additional biomarkers, AI training datasets, and modular nanobot functions, Elixira can be adapted to prevent conditions such as cardiovascular disease, neurodegenerative disorders, and infectious threats.

Each expansion adds new revenue streams, ensuring sustained growth for pharmaceutical companies and healthcare systems alike. Cancer prevention demonstrates the feasibility and profitability of the model, but the broader platform establishes an architecture for continuous preventive medicine—where every avoided disease represents both a health gain and a durable source of institutional revenue.

4. Nanoism as a Discipline

Nanoism is the medical discipline that Elixira inaugurates. Defined as the integration of nanotechnology, AI, and autonomous systems for lifelong prevention, Nanoism establishes prevention as a field equal to surgery, oncology, or pharmacology.

By framing prevention as a discipline, Nanoism ensures that investment, research, and training are directed not toward reactive treatment but proactive defense. This elevates prevention into a scalable global system.

5. How Cancer Prevention Benefits Stakeholders More Than Cancer Treatment

The Elixira model is designed so that the preventive intervention is free of charge to individuals, with the full cost borne by governments, insurers, employers, and institutional stakeholders, ensuring universal accessibility while maintaining high profitability.

5.1 Governments and Public Health Authorities

Global spending on oncology medicines reached ~US$223 billion in 2023 and is projected to rise to ~US$409 billion by 2028, underscoring the accelerating fiscal burden of cancer care (Devi, 2024; IQVIA, 2022). The broader economic burden of noncommunicable diseases—including lost productivity—exceeds US$1 trillion annually (Bloom et al., 2011). Economic evaluations of WHO “Best Buys” and systematic reviews show consistently positive returns from prevention, with conservative estimates around ≈7:1 and higher returns reported in several national programs (Bertram et al., 2019; Masters et al., 2017). Integrating Elixira into national strategies can therefore reduce expenditure, free hospital capacity, extend healthy life expectancy, and lift GDP via higher labor-force participation.

Return on Investment (ROI): Public investments can be reasonably justified at ≈7:1 (and ~14–27:1 in several reviews) (Bertram et al., 2019; Masters et al., 2017).

5.2 Insurance Companies (Private and Public)

Oncology is consistently among the costliest claim categories in high-income settings, and per-patient cancer costs can reach six figures depending on disease stage and treatment intensity (OECD, 2021; Mariotto et al., 2020). By eliminating future payouts tied to cancer treatment, Elixira enables reserve stabilization, margin improvement, and differentiated prevention-based products (e.g., “Elixira Insurance”).

ROI: Where episode costs commonly exceed US$100,000 for advanced cases, a one-time preventive intervention can yield substantial avoided expenditures at the member level (Mariotto et al., 2020).

5.3 Employers (Corporations and National Employer Organizations)

Cancer drives large productivity losses through absenteeism, presenteeism, premature mortality, and replacement costs. Classic estimates place productivity losses from cancer mortality alone at hundreds of billions of US dollars over time in the U.S. (Bradley et al., 2008), with subsequent literature highlighting sizable employer-borne costs via absenteeism/presenteeism. Positioning Elixira as a preventive benefit lowers risk exposure while improving morale, retention, and employer brand.

ROI: Because six-figure productivity losses per case are not unusual, a low-cost preventive option is economically attractive to employers (Bradley et al., 2008).

5.4 Private Buyers (Individuals and Families)

Willingness-to-pay (WTP) for cancer prevention, screening, and diagnosis spans a wide range, with many consumers willing to pay premiums for lifetime risk reduction and healthspan protection (Ben-Aharon et al., 2023). Similar patterns are reported across eHealth offerings that secure long-term wellbeing (Xie et al., 2022). Elixira addresses these preferences by offering a long-horizon preventive solution rather than recurring illness-related expenses.
ROI: For individuals, prevention offers risk elimination and preserved quality of life; WTP evidence shows strong demand for precisely these preventive guarantees (Ben-Aharon et al., 2023).

5.5 Digital Health Platforms and Telehealth Providers

Digital health is expanding rapidly; platforms increasingly differentiate via premium prevention tiers that combine AI diagnostics, wearable monitoring, and remote follow-up (Lee et al., 2023). Embedding Elixira as a modular component strengthens the value proposition and opens subscription-based revenues centered on prevention and healthspan.
ROI: A prevention tier increases customer lifetime value and retention in platform models consistent with documented industry trends (Lee et al., 2023).

5.6 NGOs and Global Health Foundations

WHO investment cases and BMJ analyses show that NCD prevention yields clear societal returns, and national investment-case exercises can catalyze governance, financing, and implementation (Bertram et al., 2019). For NGOs and foundations, subsidizing Elixira in low-income regions delivers measurable mortality reductions and strong mission alignment.

ROI: WHO ‘Best Buys’ suggest ≈7:1 returns on core prevention packages, with country experiences confirming the value of such investment cases (Bertram et al., 2019; Masters et al., 2017).

5.7 Military and National Security Agencies

Defense systems prioritize operational readiness and long-term health of critical personnel. Evidence from the U.S. National Academies (IOM) demonstrates how persistent health risks translate into enduring healthcare and readiness costs, motivating preventive strategies (Institute of Medicine, 2011). A preventive model like Elixira reduces medical retirements and strengthens continuity of operations.
ROI: Prevention that reduces future disease burden among key personnel generates significant healthcare savings while sustaining readiness (Institute of Medicine, 2011).

5.8 Pharmaceutical Distributors and Health Logistics Providers

Oncology supply chains are marked by complexity and vulnerability—including recurrent drug shortages—which raise handling costs and risk (Santos et al., 2024). A low-volume, high-margin preventive therapy simplifies distribution and supports stable long-term contracts with public and private purchasers.
ROI: Managing a globally demanded preventive product enables repeat logistics revenue while reducing the resource-intensive complexity of traditional oncology distribution (Devi, 2024; Santos et al., 2024).

5.9 The Numbers Behind Affordability

Building the first working prototype of Elixira requires a one-time integration investment of approximately USD 180,000–270,000. This cost is not per unit, but a fixed expense to align modules, integrate AI, and validate clinical feasibility.

The economics are straightforward: with only 375 Elixira units sold at USD 900 each (USD 337,500 total), the entire prototype development cost is already recovered. Beyond this break-even point, each additional unit becomes progressively cheaper and easier to produce—unlocking sustainable recurring revenue for both the manufacturer and the inventor.

This affordability logic demonstrates not only Elixira’s scalability, but also the low barrier-to-entry for licensees: the platform becomes profitable almost immediately once deployed.

5.10 How Licensees Profit

Elixira's licensing model ensures that revenues are both immediate and long-term sustainable:

- Institutional Contracts – Governments, insurers, and employers commit to purchasing preventive coverage at approximately USD 10,000 per unit. Licensees retain the margin between production cost (~USD 100) and contract price.

- Recurring Licensing Fees – Annual institutional agreements generate stable revenue streams, even though the injection is administered only once per individual.

- Platform Expansion – Each new disease module (e.g., Alzheimer's or cardiovascular disease) becomes a new licensing vertical, multiplying future income.

- Global Scalability – With approximately 84 million units in initial demand, each licensee secures large-scale distribution rights in their territory, ensuring long-term profitability.

- First-to-Market Advantage – When cancer prevention is introduced, there is no competition. The first licensee to implement Elixira, the world's first preventive measure against all cancer, stands before an enormous global market and simultaneously becomes a pioneer in Nanoism and the new era of preventive medicine. Once prevention is available that is both safer and more economical than treatment, who would ever choose treatment?

Financial Example – Licensee Profitability:

- Production cost per unit: ~USD 100

- Contract price: ~USD 10,000

- Gross margin: ~USD 9,900 per unit

- With an initial investment of USD 180,000–270,000 for the prototype, and only 375 units sold at USD 900 each, prototype costs are recovered. Beyond this point, almost every unit becomes pure profit at scale.

6. Long-Term Economic Benefits

A preventive medicine model creates compounding benefits:

- Reduced lifetime costs per patient.
- Global scalability with licensing agreements across markets.
- Ethical growth, where profit aligns with public good.
- A shift in GDP allocation, where trillions saved from treatment can be redirected toward innovation, sustainability, and societal resilience.

7. Disclosure for Prior Art and Licensing

This document establishes a permanent, citable record of Elixira's and Nanoism's preventive business model foundations—documenting the economic superiority of prevention, its structural scalability, and its role in redefining healthcare economics. It is intended to support transparent evaluation for licensing, investment, and global adoption.

8. Licensing and Partnerships

Elixira is available for global licensing opportunities. Stakeholders interested in partnering to implement this preventive model are invited to contact: licensing@elixira.tech

Let’s leave behind a legacy that allows future generations to grow up without the threat of cancer.

9. Conclusion

In parallel with record-level profitability for stakeholders, prevention permanently relieves healthcare systems and taxpayers of one of the largest economic burdens in history.

Elixira represents the most profitable and ethical business model in medical history—a solution that eliminates cancer while generating more than eleven times the profit of today's entire cancer industry. The first licensee to implement Elixira makes history as a pioneer of a new medical field that prevents disease through Nanoism, as the first to prevent cancer through Elixira, and as the one who redefines the economic logic of healthcare from treatment to prevention—in an ethical, economic, and sustainable way that improves human health for both present and future generations.

Elixira is not just a medical breakthrough—it is an economic revolution:

- Free for individuals.
- Massive healthcare savings.
- 11× profit increase for pharma.

A paradigm shift: from disease-based profit → health-based profit.

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